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55 Brake Company
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Re: Patent Review DE 4342543 A1 June 15, 2001

Dave, Nobel,

This letter is a review description of the German patent DE 4342543A1, translated from German into English. This review is a synopsis of the claims the German inventors make. If you have additional questions about this patent please let me know.

1. This patent explicitly describes a control system method for applying brakes to vehicles that travel on tracks or rails (i.e., trains). Within the patent they always specifically point out that this is meant for track/rail based vehicles.
2. The reason for the control system is referenced only to the operation of an automatic chair lift for handicapped people and a door that gives handicapped people access to the aforementioned chair lift.
3. The control system in this patent specifically refers to pneumatic, compressed air to apply brake power. They do mention however that other means of applying brake power (hydraulic, electric, or other power transmission means) are valid for this control system.
4. Description of operation of the control system: (refer to drawings attached to patent): If the vehicle door 1 and the locking system of the handicapped chair lift 2 is open, two signal switches 3,4 that are in series connected, close the electrical circuit of the magnetic valve 5 and interrupt the electrical brake control circuit 7. That has the result that the magnetic valve 5 is excited and a control light (lamp, diode, etc) goes off in the train (vehicle) command center to signal the operator of the vehicle that the brake control circuit 7 is interrupted. If the chair lift 2 is locked and the door 1 is closed, the current flow to the magnetic valve 5 through the signal switches 3,4 is interrupted and the brake control circuit is active. If only the door 1 is open but the chair lift 2 is locked, or vice versa, the brake control circuit 7 stays active and no current

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flows to the magnetic valve 5 because only one of the signal switches 3,4 is active. To activate (excite) the magnetic calve 5 both signal switches 3,4 need to be activated. When the magnetic valve 5 is excited, it opens to atmospheric pressure and resulting from that the control air circuit line 6 will be exhausted. The exhaust control element 8 will have then a pressure difference between the piston top and bottom position, which results that the piston is lifted and an opening is opened to atmospheric pressure. Through this opening, which is connected to the brake pass-thru circuit line 9, the compressed air can exhaust to atmospheric pressure. The pressure loss in the brake pass-thru circuit line 9, results that all control valves 10 of all brake cylinders 12, close the connection of the brake pass-thru circuit line 9 to the pressure accumulator 11, and the opening of the connection between the pressure accumulator 11 to the brake cylinders 12, which results that all brakes will be applied to the train. If the air pressure of the brake pass-thru circuit line 9 is at about 2.0 bar (29 psi), than the control element 8, an exhaust valve, closes automatically the opening to atmospheric pressure. A pressure build-up to normal operating pressure however is only possible when the door 1 and the chair lift 2 is locked and the active magnetic valve 5 is deactivated and the control air circuit line 6 has no pressure difference relative to the brake pass-thru circuit line 9.

In my opinion, this patent has little bearing on what 55 Brake Company does, mainly because this patent focus mainly on track/rail based vehicles.

Best Regards, Sven Evers

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